Geostationary Microwave (GEM) Sounder/Imager Observation System Simulation

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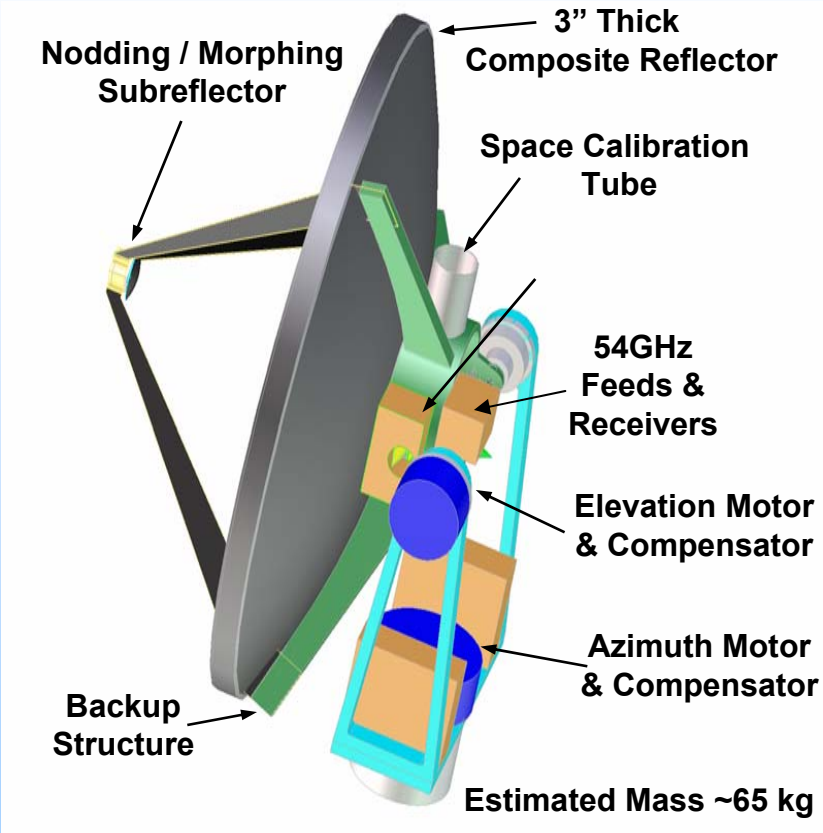
GMSWG* Concept Summary

GEosynchronous Microwave (GEM) Sensor

- Baseline system using 54, 118, 183, 380, and 424 GHz with ~2 m diameter Cassegrain antenna.
- ~16 km subsatellite resolution (~12 km using oversampling) above 2-5 km altitude at highest frequency channels.
- The 380 and 424 GHz channels selected to map precipitation through most optically opaque clouds at sub-hourly intervals.
- Temperature and humidity sounding channels penetrate clouds sufficiently to drive NWP models with hourly data.
- GEM OSSE's based on a fast forward RT Jacobian under study at NOAA/ETL



- Estimated 2004 costs: $34M non-recurring plus ~$32M/unit.

GEM 166 GHz Jacobian Cross-Sections - MM5 Hurricane Bonnie